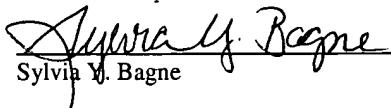




PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

*I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 5, 2004.*

  
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Sylvia M. Bagne

Applicant : Kalu K. Vasoya, et al.  
Application No. : 10/020,506  
Filed : December 11, 2001  
Title : LIGHTWEIGHT CIRCUIT BOARD WITH CONDUCTIVE  
CONSTRAINING CORES  
  
Grp./Div. : 1775  
Examiner : Xu, Ling X.  
  
Docket No. : 47490/RAG/S968

**INFORMATION DISCLOSURE STATEMENT WITH FEE  
UNDER 37 CFR §§ 1.97(d) AND 1.17(p)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PostOffice Box 7068  
Pasadena, CA 91109-7068  
April 5, 2004

Commissioner:

In compliance with the duty of disclosure under 37 CFR §§ 1.56, 1.97 and 1.98, and in accordance with the provisions in the Manual of Patent Examining Procedure §§ 609 and 707.05(b), enclosed is FORM PTO/SB/08A/B listing a reference that is known to applicant. A copy of the listed reference is enclosed.

It is respectfully requested that the listed reference be considered in the examination of this application and identified on the list of references cited on the patent issuing for this application. Applicant also requests that an initialed copy of FORM PTO/SB/08A/B be entered in the application file and returned to applicant with the next communication from the Office in accordance with MPEP § 609.

Applicant's undersigned attorney hereby certifies, in accordance with 37 CFR § 1.97(e)(2), that no item of information contained in the information disclosure statement was

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**Application No. 10/020,506**

cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in Section 1.56(c) more than three months prior to the filing of the information disclosure statement.

Enclosed is the processing fee of \$180 as required by 37 CFR § 1.17(p). The Commissioner is hereby authorized to charge any fees which may be required by this paper to Deposit Account No. 03-1728. Please show our docket number with any Deposit Account transaction. **A copy of this paper is enclosed.**

**REMARKS**

Applicants wish to refer the Examiner to the following statements made in the final paragraph of the specification of the Ozaki reference (col 3, line 37 - col 4, line 3):

In the above embodiment, the carbon cloth is impregnated with an epoxy resin as the first resin, but the carbon cloth can be impregnated with another resin as the first resin. In the above embodiment, the carbon cloth is used as a carbon core material, but non-woven fabric consisting of carbon, particle carbon or the like can satisfactorily be used as the carbon core material. In the aforementioned embodiment, as the second resin, epoxy resins 14, 34, 64 are filled in the resin pores 12, 32, 62, but another resin can be filled in the resin pores 12, 32, 62 as the second resin. In the above embodiment, through holes 18, 42, 70 are provided at portions where the epoxy resins 14, 34, 64 are filled, but only if through holes are provided at positions where no epoxy resins 14, 34, 64 are filled, the carbon cloth present in the central part of the printed circuit board base materials 10, 30, 60 can be conductive to the circuit layers 16, 36, 66.

The last sentence of the foregoing paragraph discloses that through holes that do not pass through resin filled pores can create electrical connections between the carbon containing layer and the circuit layers. Applicants submit that the teachings in the prior art of the undesirability of

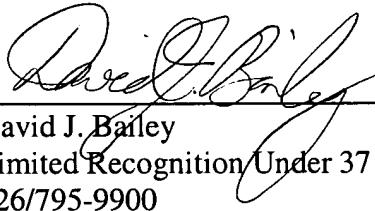
**Application No. 10/020,506**

such a connection, and the fact that the specification and claims of the Ozaki patent are directed to structures in which the establishment of such a connection is deliberately avoided, would leave one of ordinary skill in the art with no motivation to construct a printed wiring board "wherein at least one electrical connection exists between the carbon containing layer and the circuit on the electrically conductive layer," as recited in applicants' independent claim 56. Furthermore, in this context, applicants submit that a worker skilled in the art would understand the last sentence quoted above as a mere recognition of a potential disadvantage (i.e., conductivity of the carbon layer with the circuit layers) that would result if one were to attempt to drill through holes at locations "where no epoxy resins 14, 34, 64 are filled."(col. 3, line 48) Therefore, the Ozaki reference does not teach or suggest the invention of applicants' pending claims, either individually or in combination with the other prior art of record. Prompt issuance of a Notice of Allowance is hereby requested.

If Applicants' counsel can be of assistance, please do not hesitate to contact us at the number listed below.

Respectfully submitted,  
CHRISTIE, PARKER & HALE, LLP

By

  
\_\_\_\_\_  
David J. Bailey  
Limited Recognition Under 37 CFR 10.9(b)  
626/795-9900

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Enclosures: Check \$180  
Copy of IDS  
Form PTO/SB/08A/B, w/reference

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FORM PTO/SB/08A/B (10-01) Substitute for PTO-1449A/B	Attorney Docket Number	47490/RAG/S968
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	Application Number	10/020,506
	Filing Date	December 11, 2001
	Applicant(s)	Kalu K. Vasoya, et al.
	Group Art Unit	1775
	Examiner Name	Ling X. Xu

U.S. PATENT DOCUMENTS				
EXAMINER INITIALS	Cite No. <sup>1</sup>	DOCUMENT NUMBER Number - Kind Code <sup>2</sup> (If Known)	PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE
		6,013,588	01-11-2000	Ozaki

FOREIGN PATENT DOCUMENTS				
EXAMINER INITIALS	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (If Known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
				<input checked="" type="checkbox"/>

OTHER DOCUMENTS		
EXAMINER INITIALS	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article, title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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EXAMINER SIGNATURE	DATE CONSIDERED
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at <a href="http://www.pto.gov">www.pto.gov</a> or MPEP 901.4. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.	

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